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EXAMINER	
WOLDEMARIAM, AKILILU K	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/686,194	Applicant(s) HO ET AL.	
	Examiner Aklilu k. Woldemariam	Art Unit 2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 09 October 2003.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-55 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-55 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 09 October 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-55 are** rejected under 35 U.S.C. 103(a) as being unpatentable over Levin et al., hereinafter, Levin (U.S. Patent number 6, 018, 600) in view of Takakura et al., thereafter, Takakura (U.S. Patent number 6, 885, 776 B2).

Regarding claim 1, Levin discloses a method for improving resolution of a two-dimensional image capable of being acquired from an object at a first pixel size **(see fig.1, column 1, lines 54-59)** comprising defining a sampling region for producing the image at a second pixel size **(see fig.1 column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)**, the second pixel size being no larger than the first pixel size; sampling, the sampling region **(see fig.1 column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)** ; obtaining values of the pixels of the second pixel size (**see fig.1 column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)** in each of the multiplicity of sample layers; computing the value of each pixel of the second pixel size from the values of the corresponding pixels **(see column 12, lines 21-24)** in the multiplicity of the sample layers, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see fig.1,**

abstract, line 15) thereby producing the image at the second pixel size, the filter function being capable of representing artifacts from the multiple sampling **(see fig.1 column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size).**

Levin does not disclose an overlapping increment, thereby producing a multiplicity of sample layers, the overlapping increment being no larger than the first pixel size thereby determining the second pixel size.

However, Takakura discloses an overlapping increment **(see item 5A-5C, fig.1, column 1, line 40 and lines 59-65, i.e., increment referred increase within coordinate point)**, thereby producing a multiplicity of sample layers, the overlapping increment being no larger than the first pixel size thereby determining the second pixel size.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Takakura's overlapping increment and sample layers in Levin's a method for improving 2-demensional image resolution because it will allow to reduce the memory capacity for the processing in put image, [Takakura's, **see column 4, lines 15-16].**

Regarding claim 2,Takakura discloses the method of claim 1, wherein the second pixel size is equal to the overlapping increment **(see column 3, lines 21-24, i.e., increment referred as to increase with coordinate points).**

Regarding claim 3,Takakura discloses the method of claim 1, wherein the second pixel size is equal to the first pixel size divided by the multiplicity (**see column 3, lines 18 and 21-24).**

Regarding claim 4, Levin discloses a method for improving resolution of a three-dimensional image capable of being acquired from an object at a first voxel size **(see fig.1, column 1, lines 54-59)**, comprising defining a sampling space for producing the image at a second voxel size **(see fig.1, column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)** the second voxel size being no larger than the first voxel size; sampling, the sampling space **(see fig.1, column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)** ; obtaining values of the voxels of the second voxel size **(see fig.1, column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)** in each of the multiplicity of sample areas; computing the value of each voxel of the second voxel size from the values of the corresponding voxels **(see column 12, lines 21-24)** in the multiplicity of the sample areas, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see fig.1, abstract, line 15)** thereby producing the image at the second voxel size, the filter function being capable of representing artifacts from the multiple sampling **(see fig.1, column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)**.

Levin does not disclose an overlapping increment the thereby producing a multiplicity of sample areas, the overlapping increment being no larger than the first vowel size thereby determining the second vowel size.

However, Takakura discloses an overlapping increment **(see item 5A-5C, fig.1, column 1, line 40 and lines 59-65, i.e., increment referred as to increase with in the coordinate points)** the thereby producing a multiplicity of sample areas, the overlapping increment being no larger than the first vowel size thereby determining the second vowel size.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Takakura's overlapping increment and sample layers in Levin's a method for improving 2-demensional image resolution because it will allow to reduce the memory capacity for the processing in put image, [Takakura's, **see column 4, lines 15-16].**

Regarding claim 5,Takakura discloses the method of claim 4, wherein the second voxel size is equal to the overlapping increment **(see column 3, lines 21-24, i.e., increment referred as to increase with coordinate points)**.

Regarding claim 6,Takakura discloses the method of claim 4, wherein the second voxel size is equal to the first voxel size divided by the multiplicity (**see column 3, lines 18 and 21-24**).

Regarding claim 7, Levin discloses the method of claim 1, wherein the filter function **(see abstract, line 15)** is a point response function.

Regarding claim 8, Levin discloses the method of claim 7, wherein the point response function **(see abstract, line 15)** is defined by a multiple sampling **(see column 2, lines 2-3)** factor, which is equal to the multiplicity.

Regarding claim 9,Takakura discloses the method of claim 1, wherein the sampling is performed with an overlapping increment (**see column 3, lines 21-24, i.e., increment referred as to increase with coordinate points**) having a varied size.

Regarding claim 10, Takakura discloses the method of claim 1, wherein the sampling is performed with an overlapping increment **(see column 3, lines 21-24, i.e., increment referred as to increase with coordinate points)** having a fixed size.

Regarding claim 11,Takakura discloses the method of claim 1, wherein the overlapping increment is taken along one or more dimensions **(see column 3, lines 21-24, i.e., increment referred as to increase with coordinate points).**

Regarding claim 12, Takakura discloses the method of claim 11, wherein the overlapping increment is taken equally on one or more dimensions **(see column 3, lines 21-24, i.e., increment referred as to increase with coordinate points).**

Regarding claim 13, Takakura discloses the method of claim 11, wherein the overlapping increment **(see column 3, lines 21-24, i.e., increment referred as to increase with coordinate points)** is taken unequally on one or more dimensions.

Regarding claim 14, Takakura discloses the method of claim 12, wherein the overlapping increment is taken angularly **(see column 2, lines 16-22).**

Regarding claim 15, Takakura discloses the method of claim 1, wherein the overlapping increment is defined in terms of Cartesian coordinates or polar coordinates **(see column 2, lines 16-22)**.

Regarding claim 16,Takakura discloses a method for improving resolution of a two-dimensional image of an object from a plurality of images taken from the object at a first pixel size **(see column 2, line 54)**, wherein each image in the plurality is capable of overlaying one other images **(see column 2, line 55)** in the plurality at an increment, wherein the increment is no larger than the first pixel size **(see column 2, lines 55-58, I.e., increment referred as to increase with in coordinate points)**.

Takakura does not disclose the method comprising defining a region for producing the two-dimensional image at a second pixel, the second pixel size being determined by the increment; obtaining values of the pixels of the second pixel size in each image in the plurality; computing the value of each pixel of the second pixel size from the values of the corresponding pixels in the plurality, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function thereby producing the two-dimensional image at the second pixel size, the filter function being capable of representing artifacts from the multiple overlaying.

However, Levin discloses the method comprising defining a region for producing the two-dimensional image at a second pixel size **(see fig.1, column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)**, the second pixel size being determined by the increment; obtaining values of the pixels of the second pixel size (**see fig.1, column 2, lines 1-4, i.e., multiple region referred as to**

first pixel size and second pixel size) in each image in the plurality; computing the value of each pixel of the second pixel size from the values of the corresponding pixels **(see column 12, lines 21-24)** in the plurality, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see fig.1, abstract, line 15)** thereby producing the two-dimensional image at the second pixel size, the filter function being capable of representing artifacts from the multiple overlaying.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Levin's Fourier domain in Takakura's a method for improving 2-demensional image resolution because it will allow increasing the temporal or spatial resolution image, [Levin's, **see column 2, lines 55-56].**

Regarding claim 17,Takakura discloses the method of claim 16, wherein each image in the plurality overlays one other image **(see column 3, lines 21-24)** in the plurality at an increment having a fixed size and wherein the second pixel size is equal to the increment **(see column 3, lines 21-24)**.

Regarding claim 18, Takakura discloses the method of claim 16, wherein each image in the plurality overlays one other image in the plurality at an increment **(see column 3, lines 21-24, i.e., increment referred as to increase with in coordinate points)** size and wherein the second pixel size is equal to the smallest of the increment **(see column 3, lines 21-24, i.e., increment referred as to increase with in coordinate points)**.

Regarding claim 19,Takakura discloses a method for improving resolution of a three-dimensional image of an object from a plurality of images taken from the object at a first voxel size **(see column 2, line 54)**, wherein each image in the plurality is capable of overlaying one other images **(see column 2, line 55)** in the plurality at an increment, wherein the increment is no larger than the first voxel size **(see column 2, lines 55-58, i.e., increment referred as to increase with in coordinate point)**.

Takakura does not disclose the method comprising defining an area for producing the three-dimensional image at a second voxel size, the second voxel size being determined by the increment; obtaining values of the voxels of the second voxel size in each image in the plurality; computing the value of each voxel of the second pixel size from the values of the corresponding voxels in the plurality, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function thereby producing the three-dimensional image at the second voxel size, the filter function being capable of representing artifacts from the multiple overlaying.

However, Levin discloses the method comprising defining an area for producing the three-dimensional image at a second voxel size **(see fig.1, column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)**, the second voxel size being determined by the increment; obtaining values of the voxels of the second voxel size **(see fig.1, column 2, lines 1-4, i.e., multiple region referred as to first pixel size and second pixel size)** in each image in the plurality; computing the value of each voxel of the second pixel size from the values of the corresponding voxels **(see column 12, lines 21-24)** in the plurality, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see abstract, line 15)** thereby producing the three-dimensional image at the second voxel size, the filter function being capable of representing artifacts from the multiple overlaying.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Levin's Fourier domain in Takakura's a method for improving 2-demensional image resolution because it will allow increasing the temporal or spatial resolution image, [Levin's, **see column 2, lines 55-56**].

Regarding claim 20, Takakura discloses the method of claim 19, wherein each image in the plurality overlays one other image in the plurality at an increment having a fixed size and wherein the second voxel size is equal to the increment **(see column 3, lines 21-24, i.e., increment referred as to increase with in coordinate points)**.

Regarding claim 21, Takakura discloses the method of claim 19, wherein each image in the plurality overlays one other image in the plurality at an increment having a varied size and wherein the second voxel size is equal to the smallest of the increment **(see column 3, lines 21-24, i.e., increment referred as to increase with in coordinate points)**.

Regarding claim 22, Levin discloses the method of claim 16, wherein the filter function **(see abstract, line 15)** is a point response function.

Regarding claim 23, Takakura discloses the method of claim 22, wherein the point response function is defined by a multiple overlaying **(see column 2, lines 55-60)** factor, which is equal to the plurality **(see column 1, line 15)**.

Regarding claim 24, Takakura discloses the method of claim 16, wherein the overlaying is performed along one or more dimensions **(see column 2, lines 55-60)**.

Regarding claim 25, Takakura discloses the method of claim 24, wherein the overlaying is performed equally on one or more dimensions **(see column 2, lines 55-60)**.

Regarding claim 26, Takakura discloses the method of claim 24, wherein the overlaying is performed unequally on one or more dimensions **(see column 2, lines 55-60)**.

Regarding claim 27, Takakura discloses the method of claim 2, wherein the overlaying is performed angularly (**see column 2, lines 15-21**).

Regarding claim 28, Takakura discloses the method of claim 16, wherein the increment is defined in terms of Cartesian coordinates or polar coordinates **(see column 2, lines 15-21)**.

Regarding claim 29, Levin discloses a method for producing a two-dimensional image of an object from multiple acquisitions **(see column 3, line 54)** using a two-dimensional acquisition matrix **(see item 100 and 102, fig.9, column 7, line 41)**, wherein the acquisition matrix defines the resulting pixel size of the two-dimensional image, the method comprising obtaining values of the pixels in each image **(see fig.1, column 2, lines 1-4)** in the multiplicity; computing the value of each pixel from the values of the corresponding pixels **(see column 12, lines 21-24)** in the multiplicity, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see fig.8, abstract, line 15)** thereby producing the two-dimensional image, the filter function being capable of representing artifacts from multiple acquisitions **(see column 3, line 54).**

Levin does not disclose acquiring, one at a time, a multiplicity of images from the object by shifting one or more units in the acquisition matrix.

However, Takakura discloses acquiring, one at a time, a multiplicity of images from the object by shifting one **(see column 5, lines 57-58)** or more units **(see column 9, lines 14-15)** in the acquisition matrix.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Takakura's shifting in Levin's a method for improving 2-demensional image of an object from multiple acquisitions because it will allow to reduce the memory capacity for the processing of image, [Takakura's, **see column 4, lines 15-16].**

Regarding claim 30, Levin discloses a method for producing and transmitting a two-dimensional image of an object from multiple acquisitions **(see column 3, line 54 and column 19, lines 19-21)** using a two-dimensional acquisition matrix **(see item 100 and 102, fig.9, column 7, line 41)**, wherein the acquisition matrix defines the resulting pixel size of the two-dimensional image, the method comprising transmitting (**column 19, lines 19-21**), one at a time, the multiplicity of images; obtaining values of the pixels in each transmitted image **(see fig.1, column 2, lines 1-4 and column 19, lines 19-21)**

in the multiplicity; computing the value of each pixel from the values of the corresponding pixels **(see column 12, lines 21-24)** in the multiplicity, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see fig.8, abstract, line 15)** thereby producing the two-dimensional image, the filter function being capable of representing artifacts from multiple acquisitions **(see column 3, line 54)**.

Levin does not disclose acquiring, one at a time, a multiplicity of images from the object by shifting one or more units in the acquisition matrix.

However, Takakura discloses acquiring, one at a time, a multiplicity of images from the object by shifting one **(see column 5, lines 57-58)** or more units **(see column 9, lines 14-15)** in the acquisition matrix.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Takakura's shifting in Levin's a method for improving 2-demensional image of an object from multiple acquisitions because it will allow to reduce the memory capacity for the processing of image, [Takakura's, **see column 4, lines 15-16]**.

Regarding claim 31, Takakura discloses the method of claim 30, wherein the resulting pixel size of the two- dimensional image is equal to the size of one or more units of the acquisition matrix **(see column 3, line 54 and column 5, lines 9-10).**

Regarding claim 32, Levin discloses a method for producing a three-dimensional image of an object from multiple acquisitions **(see column 3, line 54** using a three-dimensional acquisition matrix **(see column 3, line 54 and item 100 and 102, fig.9,**

column 7, line 41), wherein the acquisition matrix defines the resulting voxel size of the three-dimensional image, the method comprising obtaining values of the voxels in each image **(see fig.1, column 2, lines 1-4 and column 19, lines 19-21)** in the multiplicity; computing the value of each pixel from the values of the corresponding voxels **(see column 12, lines 21-24)** in the multiplicity, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see fig.8, abstract, line 15)** thereby producing said three-dimensional image, the filter function being capable of representing artifacts from multiple acquisitions **(see column 3, line 54)**.

Levin does not disclose acquiring, one at a time, a multiplicity of images from the object by shifting one or more units in the acquisition matrix.

However, Takakura discloses acquiring, one at a time, a multiplicity of images from the object by shifting one **(see column 5, lines 57-58)** or more units **(see column 9, lines 14-15)** in the acquisition matrix.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Takakura's shifting in Levin's a method for improving 2-demensional image of an object from multiple acquisitions because it will allow to reduce the memory capacity for the processing of image, [Takakura's, **see column 4, lines 15-16]**.

Regarding claim 33, Levin discloses a method for producing and transmitting a three-dimensional image of an object from multiple acquisitions **(see column 3, line 54 and column 19, lines 19-21)** using a three-dimensional acquisition matrix, wherein the acquisition matrix **(see item 100 and 102, fig.9, column 7, line 41)** defines the resulting voxel size of the three-dimensional image, the method comprising transmitting **(column 19, lines 19-21)**, one at a time, the multiplicity of images; obtaining values of the voxels in each transmitted image **(see fig.1, column 2, lines 1-4 and column 19, lines 19-21)** in the multiplicity; computing the value of each voxel from the values of the corresponding voxels **(see column 12, lines 21-24)** in the multiplicity, thereby producing an intermediate image; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see fig.8, abstract, line 15)** thereby producing said two-dimensional image, the filter function being capable of representing artifacts from multiple acquisitions **(see column 3, line 54)**.

Levin does not disclose acquiring, one at a time, a multiplicity of images from the object by shifting one or more units in the acquisition matrix.

However, Takakura discloses acquiring, one at a time, a multiplicity of images from the object by shifting one **(see column 5, lines 57-58)** or more units **(see column 9, lines 14-15)** in the acquisition matrix.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Takakura's shifting in Levin's a method for improving 2-demensional image of an object from multiple acquisitions because it will allow to reduce the memory capacity for the processing of image, [Takakura's, **see column 4, lines 15-16]**.

Regarding claim 34, Levin discloses method of claim 33, wherein the resulting voxel size of the three- dimensional image is equal to the size of one or more units of the acquisition matrix **(see item 100 and 102, fig.9, column 7, line 41)**.

Regarding claim 35, Levin discloses the method of claim 33, wherein the acquisition matrix **(see item 100 and 102, fig.9, column 7, line 41)** comprises equally spaced units.

Regarding claim 36, Levin discloses the method of claim 33, wherein the acquisition matrix **(see item 100 and 102, fig.9, column 7, line 41)** comprises unequally spaced units.

Regarding claim 37, Levin discloses the method of claim 33, wherein the acquisition matrix **(see item 100 and 102, fig.9, column 7, line 41)** is defined in terms of reference coordinates.

Regarding claim 38, Levin discloses the method of claim 37, wherein the reference coordinates are Cartesian coordinates **(see fig.3, item 100 and 102, fig.9, column 7, line 41, i.e., Cartesian coordinates referred as to (x, y) or (x, y, z) coordinate points)** or polar coordinates.

Regarding claim 39, Levin discloses the method of claim 33, wherein the multiplicity of images **(see column 6, line 17, i.e., multiplicity referred as to grayscale images)** are acquired at defined time points over a period of time.

Regarding claim 40, Levin discloses the method of claim 39, further comprising one or more preliminary test acquisitions (**see item 100 and 102, fig.9, column 7, line 41)** for determining the scheduling of the time points.

Regarding claim 41, Takakura discloses the method of claim 33, wherein the multiplicity of images are acquired, one at a time, by shifting a decimal number of units **(see column 5, lines 56-58)** in the acquisition matrix.

Regarding claim 42, Levin discloses the method of claim 33, wherein the filter function **(see abstract, line 15)** is a point response function.

Regarding claim 43, Levin discloses the method of claim 42, wherein the point response function **(see abstract, line 15)** is defined by a multiple acquisition (**see item 100 and 102, fig.9, column 7, line 41)** factor, which is equal to the multiplicity.

Regarding claim 44, Levin discloses the method of claim 33, wherein the acquisition matrix (**see item 100 and 102, fig.9, column 7, line 41)** is adaptively determined by adjusting the unit size or scheme for the subsequent acquisitions based on assessment of variance for one or more comparators for at least two prior acquisitions.

Regarding claim 45, Levin discloses the method of claim 44, wherein the one or more comparators are selected from the group consisting of pixel or voxel data, k-space data **(see abstract, lines 10-13)**, phase data, and signal-to-noise ratio data.

Regarding claim 46, Levin discloses the method of claim 33, further comprising one or more preliminary test acquisitions for determining the unit size and scheme of the acquisition matrix (**see item 100 and 102, fig.9, column 7, line 41)**.

Regarding claim 47, Levin discloses a method for transmitting a two-dimensional image of an object **(see column 19, lines 19-21)**, the image having a first pixel size, the method comprising decomposing the image into a plurality of images taken from the object **(abstract, line 12 and column 7, line 52)**; transmitting **(see column 19, lines 40-42)**, one at a time, at least two images in the plurality; computing the value of each pixel of an intermediate image from the values of the corresponding pixels**(see column 12, lines 21-24)** in the transmitted images **(see column 19, lines 40-42)** in the plurality; and dividing, in the Fourier domain, the intermediate image by a filtering function **(see fig.8, abstract, line 15)** thereby producing a resultant two-dimensional image having a second pixel size, the filter function being capable of representing artifacts from the multiple overlaying.

Levin discloses each image in the plurality being capable of overlaying one other images in the plurality at an increment.

However, Takakura discloses each image in the plurality being capable of overlaying one other images in the plurality at an increment **(see column 3, lines 20-24 and column 9, lines 39-41).**

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Takakura's overlaying in Levin's a method for transmitting 2-demensional image of an object because it will allow to reduce the memory capacity for the processing of image, [Takakura's, **see column 4, lines 15-16].**

Regarding claim 48, Levin discloses the method of claim 47, wherein the second pixel size is equal to the first pixel size **(see column 2, lines 45-49, i.e., first pixel size referred as to first image and second pixel size referred as to second image).**

Regarding claim 49, Levin discloses a method for transmitting a three-dimensional image of an object **(see column 19, lines 19-21)**, the image having a first voxel size, the method comprising decomposing the image into a plurality of images taken from the object **(abstract, line 12 and column 7, line 52)**; transmitting (**see column 19, lines 40-42)**, one at a time, at least two images in the plurality; computing the value of each voxel of an intermediate image from the values of the corresponding pixels (**see column 12, lines 21-24)** in the transmitted images (**see column 19, lines 40-42)**in the plurality; and dividing, in the Fourier domain, the intermediate image by a filtering function thereby producing a resultant two-dimensional image having a second voxel size, the filter function **(see fig.8, abstract, line 15)** being capable of representing artifacts from the multiple overlaying.

Levin does not disclose each image in the plurality being capable of overlaying one other images in the plurality at an increment.

However, Takakura discloses each image in the plurality being capable of overlaying one other image in the plurality at an increment **(see column 3, lines 20-24 and column 9, lines 39-41)**.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Takakura's overlaying in Levin's a method for transmitting 2-demensional image of an object because it will allow to reduce the memory capacity for the processing of image, [Takakura's, **see column 4, lines 15-16]**.

Regarding claim 50, Levin discloses the method of claim 49, wherein the second voxel size is equal to the first voxel size **(see column 2, lines 45-49, i.e., first pixel size referred as to first image and second pixel size referred as to second image)**.

Regarding claim 51, Levin discloses the method of claim 49, wherein the filter function **(see abstract, line 15)** is a point response function.

Regarding claim 52, Levin discloses the method of claim 49, wherein all images in the plurality is transmitted **(see column 19, lines 19-21, 32 and 40-2).**

Regarding claim 53, Levin discloses the method of 47, wherein the two-dimensional image is selected from the group consisting of a magnetic resonance image **(see column 2, line 2)**, an image produced by a digital scanner, a pathological image, a histological image, and a radiological image.

Regarding claim 54, Levin discloses the method of 49, wherein the three-dimensional image is selected from the group consisting of a magnetic resonance image **(see column 2, line 2)**, an image produced by a digital scanner, an image produced by a digital camera or digital video, a pathological image, a histological image, and a radiological image.

Regarding claim 55, Takakura discloses the method of claim 49, wherein the computing is performed by taking arithmetic means (**see column 12, line 47 and column 13, line 40, i.e., arithmetic referred as to calculating).**

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aklilu k. Woldemariam whose telephone number is 571-270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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